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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,075	09/25/2003	Duncan Johnston-Watt	GILLP015X1	5827
22434	7590	07/14/2006	EXAMINER	
BEYER WEAVER & THOMAS, LLP			KISS, ERIC B	
P.O. BOX 70250				
OAKLAND, CA 94612-0250			ART UNIT	PAPER NUMBER
			2192	

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/671,075	Applicant(s) JOHNSTON-WATT ET AL.	
	Examiner Eric B. Kiss	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 52-90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 52-90 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The reply filed April 6, 2006, has been received and entered. Claims 52-90 are pending.

Response to Amendment

2. Applicant's amendments to the specification appropriately address the objections due to typesetting errors and an embedded hyperlink. Accordingly, these objections are withdrawn in view of Applicant's amendments.
3. Applicant's amendments to the specification do not appropriately address the objection due to improper use of trademarks. Applicant has not accompanied the trademarks by generic terminology (by using the trademarks as adjectives modifying a descriptive noun, *e.g.*, "the VISUAL BASIC development system", "the JAVA programming language"). Accordingly, this objection is maintained and reproduced below.
4. The provisional rejections based on double patenting, under 35 U.S.C. § 101 and the judicially created doctrine of obviousness-type double patenting, are moot in view of the abandonment of copending patent application 10/254,258. Accordingly, these provisional rejections are withdrawn.

Response to Arguments

5. Applicant's arguments filed April 6, 2006, have been fully considered but they are not persuasive.

Regarding the rejection of claims 78-90 under 35 U.S.C. § 101, despite applicant's argument that the claimed modules may be embodied in a computer readable medium, it is noted that they are not recited as such in the claims. Accordingly, the rejection under 35 U.S.C. § 101 is maintained.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the expression of mobility and concurrency as part of the process calculus) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The newly added claim limitations are addressed as set forth in the rejections below.

Specification

6. The use of trademarks, such as JAVA, BIZTALK, WINDOWS, DELPHI, and VISUAL BASIC, has been noted in this application. Trademarks should be capitalized wherever they appear (capitalize each letter or accompany each trademark with an appropriate designation symbol, e.g., TM or ®) and be accompanied by the generic terminology (use trademarks as adjectives modifying a descriptive noun).

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

7. Claims 55, 68, and 81 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Applicant's most recent amendment appears to incorporate the limitations from claims 55, 68, and 81 into independent claims 52, 65, and 78.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 78-90 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” In this context, “functional descriptive material” consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of “data structure” is “a physical or logical relationship among data elements, designed to support specific data manipulation functions.” The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) “Nonfunctional descriptive material” includes but is not limited to music, literary works and a compilation or mere arrangement of data. Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*. *In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (claim to a data structure *per se* held nonstatutory).

Data structures not claimed as embodied in computer-readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. *See, e.g., In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure’s functionality to be realized. In contrast, a

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claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings *per se*, *i.e.*, the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. *See In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035.

Claims 78-90 recite a "computer system" comprising a series of elements that can be reasonably interpreted as software, *per se*. The claim does not define any structural and functional interrelationships between the software elements and a computer that would permit the described functionality to be realized when the software is employed as a computer component. Accordingly, claims 78-90 appear to merely set forth functional descriptive material *per se*, which is nonstatutory.

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10. To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. §101 (non-statutory) above are further rejected as set forth below in anticipation of Applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 52-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0034848 A1 (Moore et al) in view of US 5,890,133 (Ernst).

As per claim 52, *Moore et al.* discloses providing process representations in a process calculus notation (see, for example, paragraphs [0030] and [0031]), the process representations specifying one or more environmental constraints (see, for example, paragraph [0048]); verifying that the representations are valid (see, for example, paragraph [0047]); generating executables and corresponding test data in accordance with the verified representations (see, for example, paragraph [0064]); testing the executables using the corresponding test data (see, for example, paragraph [0060]); deploying the tested executables in the distributed processing environment (see, for example, paragraphs [0037] through [0039]). *Moore et al.* fails to expressly disclose the combination of: monitoring the performance of the deployed executables to gather process execution information; analyzing information gathered in the monitoring step; and autonomically

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altering the executables and corresponding test data in accordance with analyzed process execution information. However, *Ernst* teaches a dynamic optimization procedure for such business processes, in which executing processes are monitored and the gathered information is used to modify the executables and test data (see, for example, col. 6, line 66, through col. col. 7, line 36). Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to modify the method of *Moore et al.* to include such dynamic optimizations. One would be motivated to do so to gain the known advantages of optimizing a business process (such as those benefits disclosed in column 1 of *Ernst*). *Moore et al.* further fails to expressly disclose the generating and altering executables being performed in accordance with contextual information. However, *Ernst* further teaches the use of such contextual information as part of the disclosed dynamic optimization (see, for example, col. 6, line 66, through col. col. 7, line 36). Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to further modify the method of *Moore et al.* to include such further steps in dynamic optimization as per the teachings of *Ernst*. One would be motivated to do so to gain the known advantages of optimizing a business process (such as those benefits disclosed in column 1 of *Ernst*).

As per claims 53-58, *Moore et al.* further fails to expressly disclose: altering the generation of executables and test data directly in accordance with analyzed process execution information and repeating the verification, generation, and testing steps (claims 53, 54, and 58), the generating and altering executables being performed in accordance with contextual information, including heuristics (claims 55-57). However, *Ernst* further teaches these steps as part of the disclosed dynamic optimization (see, for example, col. 6, line 66, through col. col. 7,

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line 36). Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to further modify the method of *Moore et al.* to include such further steps in dynamic optimization as per the teachings of *Earnst*. One would be motivated to do so to gain the known advantages of optimizing a business process (such as those benefits disclosed in column 1 of *Earnst*).

As per claims 59 and 60, *Moore et al.* fails to expressly disclose comparing a set of representations of the analyzed process execution information with an earlier set of process representations and altering the executables to reduce significant disparities between them, and repeating the generating, testing, analyzing and altering steps until the comparison indicates the absence of significant disparity. However, *Earnst* further teaches such comparison and disparity elimination in the dynamic optimization disclosed (see, for example, col. 12, line 44, through col. 14, line 2). Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to further modify the method of *Moore et al.* to include such disparity analysis as per the teachings of *Earnst*. One would be motivated to do so to gain the known advantages of optimizing a business process (such as those benefits disclosed in column 1 of *Earnst*).

As per claims 61-63, *Moore et al.* further discloses generating an intermediate version of the verified representation in a third generation language (such as the JAVA programming language or C) and compiling the intermediate version into the executables (see, for example, paragraph [0064]).

As per claim 64, *Moore et al.* further discloses the process calculus notation being based upon XML (see, for example, paragraphs [0030] and [0031]).

As per claims 65-77, these are product versions of the claimed methods discussed above (claims 52-64). *Moore et al.* further discloses such a product implementation (see paragraph [0089]).

As per claims 78-90, these are system versions of the claimed methods discussed above (claims 52-64). *Moore et al.* further discloses such a system implementation (see paragraph [0089]).

Conclusion

13. Any new ground(s) of rejection presented in this Office action were necessitated by Applicant's amendment. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric B. Kiss whose telephone number is (571) 272-3699. The Examiner can normally be reached on Tue. - Fri., 7:00 am - 4:30 pm. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam, can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature should be directed to the TC 2100 Group receptionist: 571-272-2100.

EBK / ~~EBK~~
July 7, 2006



TUAN DAM
SUPERVISORY PATENT EXAMINER